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Pallas's cat Status Review & Conservation Strategy

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Cover Photo: Camera trap picture of manul in the Kotbas Hills, Kazakhstan, 20. July 2016 (Photo A. Barashkova, I Smelansky, Sibecocenter)

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Legal status, utilisation, management and conservation of manul

Pallas's cats *Otocolobus manul* have an extensive range across Central Asia, covering 16 countries, from Iran in the west to China in the east. The global population is listed by the IUCN as Near Threatened. However, there is a wide variety with national conservation statuses, with some countries listing the species as Extinct (e.g. Armenia & Azerbaijan), others as Endangered (e.g. China and Turkmenistan) and some as Near Threatened (e.g. Pakistan, Mongolia, Kyrgyzstan). For regions (e.g. Mongolia & China) where historical data on the level of utilisation and trade is known, it was considered high (e.g. early 1900's in Mongolia offtake estimated at 50,000 skins) but for other regions the level is unknown (e.g. Bhutan, Nepal, India). Data indicates skins of Pallas's cats have been traded the most. Other used items derived from Pallas's cats include fats, oils, meat and organs. We lack data to estimate the extent of domestic versus international trade. 37 conservation and research projects were documented to date, but the species seems not to be included in any national action or management plan. From a conservation perspective the inclusion of Pallas's cat into such plans could be a key element in the long-term conservation of the species.

International trade in wildlife includes complex interactions with people and the environment, which are often poorly understood (Cooney et al. 2015). Elusive, cryptic behaviour of species can, when coupled with limited research studies, result in low detection rates making detailed knowledge on species occurrence, population size, status, threats and trends challenging. Such a situation is true for the Pallas's cat. Local communities living across Pallas's cat range countries have a poor understanding of what Pallas's cats are or even look like (Ruta 2018). Without reliable information, or basic understanding of the species, the ability to develop and implement effective conservation strategies or for its inclusion within local, national or international conservation management plans is likely compromised or even neglected. This chapter aims to provide an overview of Pallas's cat legal status, wildlife trade and utilisa-tion (domestic & international), management and conservation. Data was collected using a standardised questionnaire, distributed to in-country experts, as well as personal communication with Pallas's cat researchers, international trade through the CITES trade database, and trafficking information from publications. It must be noted however that, with the existing knowledge gaps of the species and the fact that the CITES trade database only reflects reported transboundary trade, some of the conclusions should be taken with caution.

Legal Status

The global IUCN Red List of Threatened Species lists the Pallas's cat as Near Threatened (Ross et al. 2016; Chapter 1). However, the species' listing in national Red Data Books varies depending on the country. Pallas's cats are considered extinct in Armenia and Azerbaijan (Askerov et al. 2013, Khorozyan 2010). Its status in Uzbekistan and Tajikistan is unclear and it is not listed in the Red Data Books of these countries based on the lack of presence records (Rahimi et al. 2017, Azimov et al. 2015; Supporting Online Material SOM). However, the species has previously been considered a resident or migrant species to all.

Three range countries (Bhutan, Iran, Afghanistan) do not have national Red Data Books of threatened species but the Pallas's cat is protected by law. In Nepal the species is listed as Data Deficient given the lack of species information (SOM).

Both China and Turkmenistan list the species as Endangered (Jutzeler et al. 2010, Rustamow et al. 2011) with populations in Kazakhstan and Russia considered "rare" (Dronova 2001, Grachev 2008). Pakistan, Mongolia and Kyrgyzstan currently list the species as Near Threatened (Sheikh et al. 2004, Clark et al. 2006, Davletkeldiev et al. 2006). No red list status for India could be found despite it being a protected species.

Pallas's cats are known to be protected by law in 12 of the 16 range countries, with the remaining four countries being Armenia and Azerbaijan where the species is extinct, Tajikistan where the status is unclear and Mongolia where the species is not protected. It is unclear, despite being regionally extinct, as to whether the species is still considered as "protected" in Armenia and Azerbaijan (SOM). In Mongolia 12% of the species range lies within important protected areas (Clark et al. 2006) but poaching of the species within these areas has been documented to be frequent (Murdoch et al. 2007). Despite it's Near Threatened status, Mongolia remains the only range country where (it is known) there is no legal protection for the species (Wingard & Zahler 2006) and where trophy hunters can purchase hunting licenses to export trophies, from which US$70 has been allocated to the government (Clark et al. 2006).

Although the species is fully protected by law in almost all other range countries with extant populations, Russia, Kazakhstan, Kyrgyzstan, Uzbekistan and China are known to have legal mechanisms for capture, hunting or even trade of Pallas's cats following strict regional permitting systems. However, such permits are often only issued for conservation purposes. In Russia these conditions are specifically documented in the legislation but in other countries such as Kazakhstan reasons for permit acquisition including ex-situ breeding, scientific investigation or development of traditional hunting (the last applies to specific bird species e.g. saker falcon *Falco cherrug*, golden eagle *Aquila chrysaetos* etc.) are less clear.

Trade and utilisation

Information on the level of Pallas's cat trade is available to some extent from animal trade databases and historical reports. Although there was little international trade, as of the mid-1990's, the manul had long been hunted for its fur in relatively large numbers. In the 1950's annual trade figures from Western China alone (excluding Inner Mongolia and Manchuria) were in the order of 10,000 (Tan1984, Nowell & Jackson 1996). Even greater annual off take occurred throughout Mongolia during the early 1900's which was reported as being as high as 50,000 skins (Heptner & Sludskii 1992, Wingard & Zahler 2006, Nowell & Jackson 1996) and in the mid-1970's harvests from Afghanistan were estimated at 7,000 (Rodenburg 1977, Nowell & Jackson 1996). Despite this historical harvest and trade of Pallas's cats for fur, with large numbers from Mongolia, Russia and China, the international trade in Pallas's cat pelts has largely ceased since the late 1980's (Fig. 1; Ross et al. 2016).

Trade and utilisation of the species was not restricted to skins as records indicate the fat, oil, meat and organs were also used for medicinal purposes in Mongolia and Russia (Ross et al. 2016; Chapter 8), however little data exists regarding scale or trends.

An important milestone for greater control and recording of international trade came on the 4 February 1977 when Pallas's cat (as *Felis manul*) was listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES on Appendix II (CITES 2019). Currently all Pallas's cat range countries are member states of CITES except Turkmenistan (CITES 2019). Data from the CITES Trade Database, helps to provide a general overview of recorded trade in Pallas's cats since 1977. When a search is restricted to include only range countries as the "exporting countries" it shows that between 1977 and 2018 Russia (including former Soviet Union) had the highest number of records (69) for trade exports (i.e. number of times they were listed as exporting country). This was fol-lowed by Mongolia (32), China (31), Pakistan (1) and Afghanistan (1). During this period the items traded in the greatest volume were skins with a total reported quantity of 4,522, followed by specimens (i.e. any recognisable part of the species) with a total of 767 and live specimens with a total of 124 (CITES 2019).

It is important to note that prior to 1989 no "source" records (i.e. confirmation of the source location) are available highlighting the caution when using these figures.

When records are only used where the source location is known (1989 – 2018) and restricted to "taken from wild" (W), "confiscated or seized" (I) and "taken from wild as juvenile and reared" (R) the figures for reported quantity of the above items change with skins totalling 11, specimens totalling 441 and live specimens totalling 51 (CITES 2019).

When considering all trade exporter reported quantities from range countries recorded by CITES, the database does indicate a peak of recorded international trade between 1984 and 1992 with a decline thereafter (CITES 2019; Fig. 2).

Whilst there is some value in using this CITES database tool as a general guide such figures are unlikely to provide a realistic account of the full extent of trade during this timeframe given that domestic trade is not accounted for and that there is an issue of potential duplication of records for import/export of the same item's multiple times. It is also worth noting that there is a wide variety to "purpose" of Pallas's cat trade items, as used in the database. Listed purposes include breeding in captivity or artificial propagation, educational, hunting trophy, medical (including biomedical research), reintroduction or introduction into the wild, personal, scientific, commercial and zoo.

Despite some records indicating a diminished trade in Pallas's cat data from questionnaires, compiled during this report, highlighted that some level of trade, hunting and harvest continues. Six out of the eight range country questionnaires (Afghanistan, Iran, Pakistan, Bhutan, Nepal and India) stated that both Pallas's cat harvest/hunting/culling and trade in body parts continues, however the number and trends are largely unknown. The remaining questionnaires, from Armenia and Azerbaijan, reported no harvest, hunting, or culling however given that populations are considered extinct in both countries this should be expected. Given the documented decline in (international) trade of Pallas's cats in the last two to three decades (Fig. 1) it is likely that current hunting and trade activities are unlikely to be extensive, but for areas with a small and fragmented population, the impact could still be significant. Data from Iran suggests the species is occasionally killed by herders. Additional records reported 16 verified mortality records of the Pallas's cat in Iran caused by herding or feral dogs (n = 7), live capture attempts by local people or wildlife authorities (n = 7), and poaching (n = 2; Farhadinia et al. 2016; Chapter 4). In Afghanistan hunting/harvest as well as trade were reported to occur. Pallas's cats were stated to be captured for pets/domestication and killed for skins to make blankets. Again, the number and trend were unknown. In Pakistan the level of hunting/harvest is unknown however trade was identified as being present. Like in Afghanistan, Pallas's cats were captured for pet/domestication and killed for their skins. Although the number taken was unknown, it was recorded that the trend was increasing.

Mongolia continues to be the only range state which still permits hunting for "household purposes", although the permitting system is considered ineffective and Pallas's cat furs were exported to China as of 2005 (Murdoch et al. 2006). The continuing "trade" in Pallas's cats from Mongolia is highlighted by the number of CITES export permits for the species. Between 1996 and 2015 Pallas's cats export permits (28) were ranking fifth behind that of grey wolf *Canis lupus* (291), argali *Ovis ammon* (263), saker falcon (83) and golden eagle (30; Wingard et al. 2018). As Mongolia is considered the "stronghold" of the species (Ross et al. 2016) and as China is hosting 50% of the global manul distribution range (Jutzeler et al. 2010), developments in both countries have the potential to have a significant impact on global trends.

Trade and or hunting in Pallas's cats is only one of several factors that has the potential to influence wild populations and conservation status. Culling or hunting, possibly even trade, in Pallas's cat prey or sympatric species such as pika *Ochotona* spp. or marmots *Marmota* spp. could also be a key factor. Pallas's cats depend on marmot burrows and rock cavities particularly for raising young (Ross et al 2010a) and any significant change in marmot distribution and abundance could negatively impact the species. Pallas's cats are also shot as mistaken for marmots (Ross et al. 2016).

Data collected during the first cross-sectional study on wildlife trade in Mongolia, Silent Steppe (Wingard & Zahler 2006) and Silent Steppe II (Wingard et al. 2018), aimed to identify both, practices and trends over a ten-year period. The study undertook surveys within local communities and at markets conducting 5,100 surveys in 2005 and then 4,920 in 2016. Results from the second study (2016) indicat-

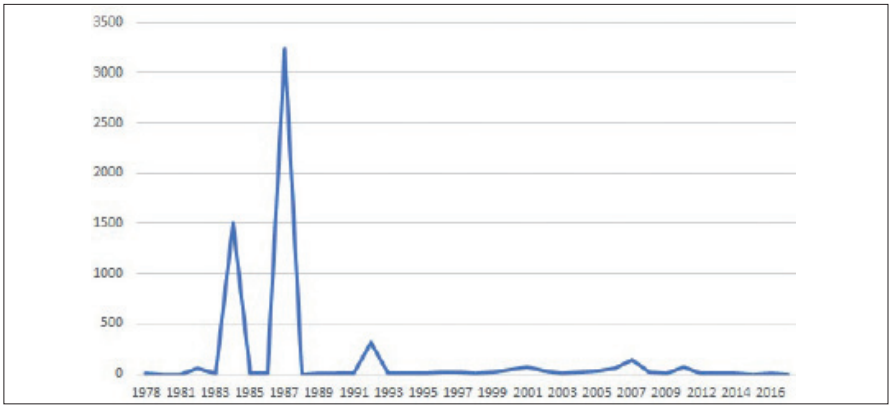

Fig. 2. Reported quantities of all Pallas's cat exports from range countries 1978 – 2016 (CITES trade database 2019).

ed that 44% of hunters targeted Siberian marmots and although total take per hunter was down compared to 2005, the total estimated take volume still indicates significant levels of illegal hunting, exceeding quotas by many magnitudes (Wingard et al. 2018).

In addition to marmots, pika are an extremely important species for the survival of Pallas's cats, as they are known to make up most of their diet (Ross et al. 2010b). Prey depletion is hence a serious threat for Pallas's cats as pika are poisoned, over-hunted and targeted as pests in China and Mongolia due to their competition, with livestock, for forage (Ross et al. 2016). It has been reported that whilst poisoning continues in China, pika populations have been reduced to less than 5% of pre-control densities (Lai & Smith 2003, Ross et al. 2016; Chapter 8 & 5). China is not alone in this practice as control of other Pallas's cat prey (i.e. rodents) in Russia also continues, however it is suggested that this only occurs at small localised scales which are not expected to threaten Pallas's cats (Shilova & Tchabovsky 2009, A. Barashkova, pers. comm., Ross et al. 2016; Chapter 3 & 5).

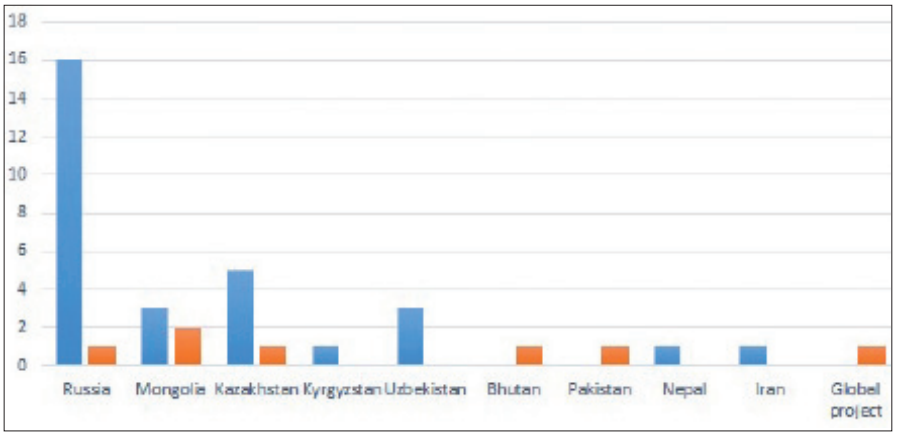

Fig. 3. Number of Pallas's cat field projects to date: completed (blue) & ongoing (orange; Chapter 3, PICA 2019)

Management and conservation

The Pallas's cat is recognised by species specialists and conservationists as a species of special conservation concern in every range country where its presence is known. It is an indicator species for steppe habitats, and efforts to improve our understanding on presence, distribution, population dynamics and threats would not only improve our ability to conserve the species, but also benefit other key species across its range. Data from questionnaires indicated that there are currently no formal national conservation management plans or conservation action plans for the species across any of the range countries.

Despite the lack of inclusion in national action plans there has been, and continue to be, several conservation and research projects undertaken across the range. Central Asia has likely had the largest amount of field projects with 33 projects being undertaken since 1992 (Chapter 3). The first recorded field project in Central Asia was undertaken in Russia in 1992, which focused on distribution, abundance and habitat preference of manul (SOM Chapter 3). Since then there has been 16 other projects in Russia, 5 in Mongolia, 6 in Kazakhstan, 3 in Uzbekistan and 1 in Kyrgyzstan. Outside of Central Asia there has been one project in each Iran, Nepal, and Bhutan, and a new project is currently being developed in Pakistan (PICA, pers. comm.). An over-arching project (Pallas's Cat International Conservation Alliance PICA (www.pallascats.org) supports the development of field project across range countries.

Although there has been a wide and prolonged interest in Pallas's cat field research, covering a period of 26 years and across nine range countries, there are unfortunately only six projects that are currently active (Fig. 2). Data from these projects does however indicate an increase in the development of specialised field monitoring techniques, increased species awareness and education throughout range country communities as well as an improved understanding of Pallas's cat distribution, habitat use and threats (Chapter 3). Another important tool in the long-term support to in situ conservation and research is the Pallas's Cat Working Group PCWG – http://www.savemanul.org/eng/). Established in 2012, the PCWG includes currently 30 members from 11 of the 16 range countries as well as specialists from non-range countries. Although Pallas's cats have not yet been integrated into any formal national plans, there are existing strategic plans focused toward sustainable management and biodiversity within all range countries (excluding Uzbekistan and Kazakhstan) that could indirectly benefit the species. As an obligation to the Convention on Biological Diversity, National Biological Strategies and Action Plans NBSAP's) have been developed by 14 of the 16 range countries, documenting a commitment to conservation and sustainable use of biological diversity and natural resources (CBD 2019). Current conservation efforts for Pallas's cats could give greater internation-al credibility and an increased potential for its future inclusion by regional authorities into strategic management plans.

Discussion

While some reports indicate that global trends in international wildlife trade are increasing (Roe 2008) data for Pallas's cats suggests that the current level of trade is significantly lower than that of the 19th and early 20th century. However, there is still a need to increase understanding of the risks and opportunities presented by trade in order to improve the management of its impacts on conservation and livelihoods (Cooney et al. 2015). With Pallas's cats absent from all formal national management or action plans it is likely, should they be included in the future, that this would benefit the species conservation. National and international policy can be a major influencer on conservation and livelihoods, particularly through determining whether legal trade can occur and under what conditions (Cooney & Abensperg-Traun 2013). For small, elusive species like the Pallas's cat where a detailed understanding of local populations is rarely available, it is easy for them to go unnoticed in terms of national conservation value. High profile species (e.g. rhinoceros, tigers, elephants) often dominate academic and policy debates to a point where complex international wildlife trade products, actors, networks and contexts are overlooked (Phelps et al. 2016). It is therefore important that efforts to increase the species recognition, e.g. inclusion in management plans, global aware-ness, improved education, are delivered at the same time as other conservation efforts e.g. threat control programme, training of border guards/customs officers, protection of key habitats. While it is recognised that many species require conservation action, the question of how to use limited and usually inadequate human and financial resources most effectively remains a critical issue when designing practical conservation

strategies (IUCN/SSC 2008). The Pallas's cat conservation strategy (Chapter 10) should not only act as a catalyst for increased conservation action, but also as a tool to enable prioritisation of actions and the best use of all available resources. There are still considerable gaps in our knowledge of Pallas's cats which impact our ability to deliver targeted actions. However, with the PCWG as an international network, the PICA to support global awareness and the development of further projects, and the Conservation Strategy (Chapter 10), the potential for successful long-term conservation of the species has improved.

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